

TITLE  
GENES ENCODING CAROTENOID COMPOUNDS  
ABSTRACT OF THE DISCLOSURE

Genes have been isolated from strain DC260, a member of the  
5 *Enterobacteriaceae* family, encoding geranylgeranyl pyrophosphate  
(GGPP) synthetase (CrtE), phytoene synthase (CrtB), phytoene  
desaturase (CrtI), lycopene cyclase (CrtY),  $\beta$ -carotene hydroxylase (CrtZ),  
and zeaxanthin glucosyl transferase (CrtX) activity. The genes and their  
products are useful for the conversion of farnesyl pyrophosphate to  
10 carotenoids. Vectors containing those DNA segments, host cells  
containing the vectors and methods for producing those enzymes by  
recombinant DNA technology in transformed host organisms are  
disclosed.

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